AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): An integrated circuit comprising a biasing circuit for maintaining the transconductance of a Gm cell constant, the integrated circuit comprising an on-chip constant voltage source and an on-chip constant current source, the on-chip constant current source having a connection for an external resistance, the value of the external resistance determining the current generated by the constant current source, characterised in that the biasing circuit comprises:

means for providing a first fraction ~~(β)~~ of the current generated by the on-chip current source to bias the output of the Gm cell;

means for providing a second fraction ~~(α)~~ of the voltage generated by the on-chip voltage source to bias the input of the Gm cell; and

means for controlling the transconductance of the Gm cell to be equal to the ratio of said fraction of the current generated by the on-chip current source to said fraction of the voltage generated by the on-chip voltage source.

Claim 2 (currently amended): An integrated circuit as claimed in claim 1, wherein the means for controlling the transconductance comprises a feedback circuit including an amplifier, the amplifier providing a control signal ~~(39)~~ for controlling the transconductance of the Gm cell.

Claim 3 (currently amended): An integrated circuit as claimed in claim 2, wherein the control signal ~~(39)~~ is a current signal.

Claim 4 (currently amended): An integrated circuit as claimed in claim 2, wherein the control signal ~~(39)~~ is a voltage signal.

Claim 5 (currently amended): An integrated circuit as claimed in ~~any one of the preceding claims~~ claim 1, wherein the means for providing [[a]] the second fraction ~~(α)~~ of the on-chip voltage source comprises first and second transistors ~~(68, 69)~~, the first and second transistors having a gain ratio of 1:n.

Claim 6 (currently amended): An integrated circuit as claimed in claim 5, wherein the gain n of the second transistor ~~(69)~~ is predetermined according to the transconductance characteristics of the Gm cell being controlled.

Claim 7 (currently amended): An integrated circuit as claimed in ~~any one of the preceding claims~~ claim 1, wherein the means for providing [[a]] the first fraction ~~(β)~~ of the on-chip current source comprises a transistor ~~(55)~~.

Claim 8 (currently amended): An integrated circuit as claimed in claim 7, wherein the gain m of the transistor ~~(55)~~ is chosen according to the transconductance characteristics of the Gm cell being controlled.

Claim 9 (currently amended): An integrated circuit as claimed in ~~any one of the preceding claims~~ claim 1, wherein the on-chip current source and on-chip voltage source are generated using the same voltage reference, such that the transconductance of the Gm cell is equal to the ratio of the first fraction ~~(β)~~ to the second fraction ~~(α)~~ divided by the value of the external resistor ~~(51)~~.

Claim 10 (currently amended): An integrated circuit as claimed in ~~any one of claims~~ claim 2 ~~to 9~~, further comprising a second Gm cell, the second Gm cell providing a common

mode operating point voltage at the input of the first Gm cell, the second Gm cell also being controlled by the control signal ~~(39)~~.

Claim 11 (original): An integrated circuit as claimed in claim 10, wherein the components forming the second Gm cell are matched with the components forming the first Gm cell.

Claim 12 (currently amended): An integrated circuit as claimed in ~~any one of claims~~ claim 1 ~~to 9~~, wherein the first fraction ~~(β)~~ of the on-chip current source is connected differentially to the output of the Gm cell, and wherein the second fraction ~~(α)~~ of the on-chip voltage source is connected differentially to the input of the Gm cell.

Claim 13 (currently amended): An integrated circuit as claimed in claim 2, wherein the control signal ~~39~~ is also used to control another Gm cell of the same design on the integrated circuit.

Claim 14 (currently amended): An integrated circuit as claimed in claim 2, wherein the control signal ~~39~~ is used to control another Gm cell on the integrated circuit, the design characteristics of the other Gm cell having a predefined ratio to the design characteristics of the first Gm cell.

Claim 15 (currently amended): A method of maintaining the transconductance of a Gm cell on an integrated circuit constant, the integrated circuit comprising an on-chip constant voltage source and an on-chip constant current source, the on-chip constant current source having a connection for an external resistance, the value of the external resistance determining the current generated by the constant current source, characterised in that the method comprises the steps of:

providing a first fraction ~~(β)~~ of the current generated by the on-chip current source to bias the output of the Gm cell;

providing a second fraction ~~(α)~~ of the voltage generated by the on-chip voltage source to bias the input of the Gm cell; and

controlling the transconductance of the Gm cell to be equal to the ratio of said fraction of the current generated by the on-chip current source to said fraction of the voltage generated by the on-chip voltage source.

Claim 16 (currently amended): A method as claimed in claim 15, wherein the step of controlling the transconductance comprises providing a feedback circuit including an amplifier, the amplifier providing a control signal ~~(39)~~ for controlling the transconductance of the Gm cell.

Claim 17 (currently amended): A method as claimed in claim 16, wherein the control signal ~~(39)~~ is a current signal.

Claim 18 (currently amended): A method as claimed in claim 16, wherein the control signal ~~(39)~~ is a voltage signal.

Claim 19 (currently amended): A method as claimed in ~~any one of claims~~ claim 15 ~~to 18~~, wherein the step of providing [[a]] the second fraction ~~(α)~~ of the on-chip voltage source comprises providing first and second transistors ~~(68, 69)~~ having a gain ratio of 1:n.

Claim 20 (currently amended): A method as claimed in claim 19, further comprising the step of setting the gain n of the transistor ~~(69)~~ according to the transconductance characteristics of the Gm cell being controlled.

Claim 21 (currently amended): A method as claimed in ~~any one of claims~~ claim 15 ~~to 20~~, wherein the step of providing [[a]] the first fraction ~~(β)~~ of the on-chip current source

comprises providing a transistor ~~(55)~~ to generate the first fraction ~~(β)~~ of the on-chip current source.

Claim 22 (currently amended): A method as claimed in claim 21, further comprising the step of setting the gain m of the transistor ~~(55)~~ according to the transconductance characteristics of the Gm cell being controlled.

Claim 23 (currently amended): A method as claimed in ~~any one of claims~~ claim 15 ~~to 22~~, wherein the on-chip current source and on-chip voltage source are generated using the same voltage reference, such that the transconductance of the Gm cell is equal to the ratio of the first fraction ~~(β)~~ to the second fraction ~~(α)~~ divided by the value of the external resistor ~~(51)~~.

Claim 24 (currently amended): A method as claimed in ~~any one of claims~~ claim 16 ~~to 23~~, further comprising the step of providing a second Gm cell, the second Gm cell providing a common mode operating voltage to the input of the first Gm cell, the second Gm cell also being controlled by the control signal ~~(39)~~.

Claim 25 (original): A method as claimed in claim 24, further comprising the step of matching the components forming the second Gm cell with the components forming the first Gm cell.

Claim 26 (currently amended): A method as claimed in ~~any one of claims~~ claim 15 ~~to 23~~, further comprising the step of connecting the first fraction ~~(β)~~ of the on-chip current source differentially to the output of the Gm cell, and connecting the second fraction ~~(α)~~ of the on-chip voltage source differentially to the input of the Gm cell.

Claim 27 (currently amended): A method as claimed in claim 16, wherein the control signal ~~39~~ is also used to control another Gm cell of the same design on the integrated circuit.

Claim 28 (currently amended): A method as claimed in claim 16, wherein the control signal ~~39~~ is used to control another Gm cell on the integrated circuit, the design characteristics of the other Gm cell having a predefined ratio to the design characteristics of the first Gm cell.